Expert Elicitation – Potential applications in economic evaluations

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CADTH

Disclosure

CADTH is funded by Canada's federal, provincial, and territorial ministries of health, with the exception of Quebec.

Application fees for three programs:

- CADTH Common Drug Review (CDR)
- CADTH pan-Canadian Oncology Drug Review (pCODR)
- CADTH Scientific Advice

CADTH

Canadian Agency for Drugs & Technologies in Health

We are an independent, not for profit organization responsible for providing Canada's health care decision-makers with objective evidence about the optimal use of drugs and medical devices.

Our Programs and Services

Drug Reimbursement Recommendations
- CADTH Common Drug Review (CDR)
- CADTH pan-Canadian Oncology Drug Review (pCODR)

Health Technology Management Program
- Optimal Use
- Rapid Response
- Environmental Scanning
- Horizon Scanning

Implementation Support and Knowledge Mobilization
- Located in jurisdictions across Canada
- Understand the needs and priorities of local decision-makers
- Offer implementation support and tools to help move evidence into policy and practice

Other Programs and Services
- Scientific Advice

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Recommendations

Recommendations made to decision makers based on comparative clinical effectiveness and cost effectiveness

Issues when cost effectiveness is uncertain…

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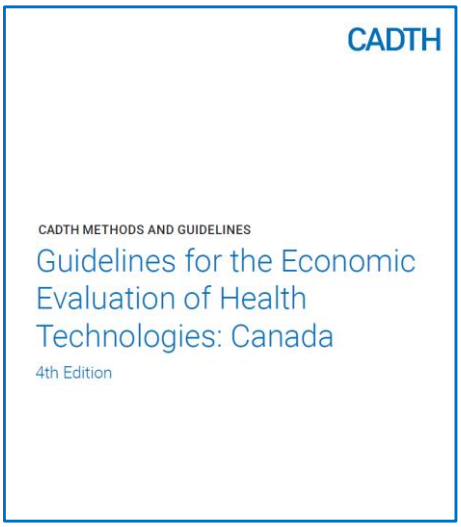
Guidelines

- Recently updated 4th edition of the Guidelines released 2017
- A few areas beyond the scope of the update
  - Including how to approach model inputs where data is limited and the use of experts



https://cadth.ca/sites/default/files/pdf/guidelines_for_the_economic_evaluation_of_health_technologies_canada_4th_ed.pdf

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Areas of Uncertainty

- Natural history of conditions
- Comparative clinical effects
- Utility values for health states
- Resource use
- Variability around parameters

Not always supported by evidence

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Commonly Used Approaches in Canada

Assumptions

- based on single expert
- using no specific protocols
- poorly documented

Arbitrary assignment of values

Application of “similar” sources of information

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Expert Elicitation

Following the update to the Guidelines, expert elicitation was identified as a topic to be further explored

Project on the use of expert elicitation was initiated

- Literature review conducted

Determined work in expert elicitation being conducted in the UK

PharmacoEconomics (2017) 35:867–877
DOI 10.1007/s40273-017-0525-1

PRACTICAL APPLICATION

Informing Reimbursement Decisions Using Cost-Effectiveness Modelling: A Guide to the Process of Generating Elicited Priors to Capture Model Uncertainties

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Abstract In informing decisions, utilising health technology assessment (HTA), expert elicitation can provide valuable information, particularly where there is a less-developed evidence-base at the point of market access. In these circumstances, formal methods to elicit expert judgements are preferred to improve the accountability and often numerous parameters required, not all of which can be defined using the same quantities. This increases the need for the elicitation task to be as straightforward as possible for the expert to complete.

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Experiences of Structured Elicitation for Model-Based Cost-Effectiveness Analyses

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ABSTRACT

Background: Empirical evidence supporting the cost-effectiveness estimates of particular health care technologies may be limited, or it may even be missing entirely. In these situations, additional information, often in the form of expert judgments, is needed to reach a decision. There are formal methods to quantify experts' beliefs, termed as structured expert elicitation (SEE), but only limited research is available in support of methodological choices. Perhaps as a consequence, the use of SEE in the context of cost-effectiveness modelling is limited. **Objectives:** This article reviews applications of SEE in cost-effectiveness modelling with the aim of summarizing the basis for methodological choices made in each application and recording the difficulties and challenges reported by the authors in the design, conduct, and analyses. **Methods:** The methods used

methodological uncertainty in justifying their choices. Specificities of the context area emerging as potentially important in determining further methodological research in elicitation are between-expert variation and its interpretation, the fact that substantive experts in the area may not be trained in quantitative subjects, that judgments are often needed on various parameter types, the need for some form of assessment of validity, and the need for more integration with behavioural research to devise relevant debiasing strategies. **Conclusions:** This review of experiences of SEE highlights a number of specificities/constraints that can shape the development of guidance and target future research efforts in this area.

Keywords: Bayesian, cost effectiveness, decision modeling, elicitation, expert judgment, subjective

Collaboration

Connected with Laura and Marta

Discussions on project over the last 2 years

Opportunity for information sharing and input

Opportunities with Approach

Structured approach – consistency
Documented and transparent – reproducible
Reflects uncertainty at individual expert level
Identifies biases that may exist within expert elicitation
Identifies variation among experts

Better reflecting uncertainty in estimates
Can be used in probabilistic analyses

Challenges

Timing
- How to implement within CADTH timelines?

Potential need to change process for projects
- Possible within drug review framework?

Recruiting sufficient experts
Burden on experts
Understood by decision makers?

Possible Next Steps

Gain knowledge of implementation considerations and learnings from colleagues

Determine a project in which CADTH can test the approach/principles

- Develop a protocol
- Assess feasibility
- Understand time requires and commitment by experts

Consider an approach that might be used by CADTH

Opportunity to provide guidance on more robust approaches to eliciting expert opinion

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Live Content Slide

When playing as a slideshow, this slide will display live content

Poll: How do you anticipate using the guidance in your setting?